機率與統計期中考

[1]

(a) $\mathrm{f_Z(Z)} = \frac{1}{\sqrt{2\pi}} e^{-\frac{1}{2}Z^2}$

(b) 68.27%

(c) 1.96

(d) $\mathrm{f_q(Q)} = \frac{1}{\sqrt{2\pi}} x^{-1} e^{-\frac{1}{2}x^2}$

(e) E[Q]=1

(f) Std[Q]=$\sqrt{2}$

(g) P(Q<=1)= 0.6826894921370859

[2]

(a) $\mathrm{f_T(t)} = e^{-t}$

(b) E[T]=1

(c) Std[T]=$\sqrt{1}$

(d) 0.36787944117144245

(e) $\mathrm{f_{T_3}(t)} = \frac{1}{2} t^2 e^{-t}$

(g) $E[T_3]=3$

(h) Std $[T_3]=\sqrt{3}$

(i) 廠商高興就好啦，

0.029636163880521763。